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NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 3 Science, 2009

90731 Describe geological processes affecting New Zealand

Credits: Two
9.30 am Monday 30 November 2009

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

If you need more space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

For Assessor's use only	**Achievement Criteria**		
Achievement	**Achievement with Merit**	**Achievement with Excellence**
Describe geological processes affecting New Zealand. ☐	Explain geological processes affecting New Zealand. ☐	Discuss geological processes affecting New Zealand. ☐
Overall Level of Performance ☐		

You are advised to spend 25 minutes answering the questions in this booklet.

Assessor's use only

QUESTION ONE : VOLCANOES

White Island (Whakāri) is New Zealand's most active volcano. It is the northernmost volcano in the Taupo volcanic zone and has been built up over time from numerous eruptions. All recent White Island eruptions have been andesitic in composition.

www.geonet.org.nz/images/volcano/our-volcanoes/White-Island-28766-20-lge.jpg

(a) Describe TWO characteristic features of an **andesitic volcano**.

(b) Discuss the **processes** that cause White Island to erupt.

Your answer should include:

- tectonic processes
- type of magma
- reference to shape of volcano.

A labelled diagram may assist your answer.

Assessor's use only

QUESTION TWO: EARTHQUAKES

Assessor's use only

Earthquakes can be measured in several ways. The two common and widely accepted methods are the Richter scale and the Modified Mercalli scale.

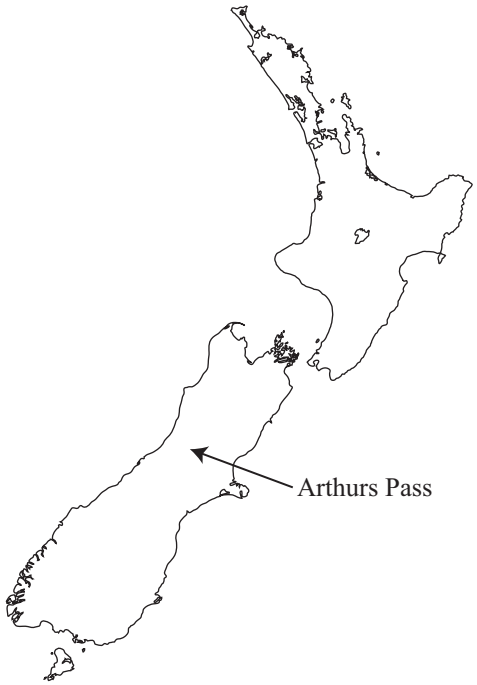
Compare and contrast the Richter scale and the Modified Mercalli scale to **discuss** their **usefulness** in describing earthquakes that occur on land and / or under the oceans.

Assessor's use only

QUESTION THREE: SHAKY EARTH

Assessor's use only

On 10 March 2009 at 7:39 am, there was an earthquake 10 km west of Arthurs Pass. It was measured at 3.5 on the Richter scale and was 7 km deep.



(a) Describe the difference between the epicentre and the focus of an earthquake.

(b) Discuss the geological processes that would have occurred to cause this earthquake.

Your answer should include the following:

- fault line movement involved (a labelled diagram may assist)
- reference to depth and location.

Assessor's use only

Extra paper for continuation of answers if required.
Clearly number the question.

Assessor's use only

Question number